

# Thinking and Reasoning Algebraically: A Recipe for Success

## Grades 4-6

Workshop #059-17

**November 16, 2016 and January 11-12, 2017**
**GRREC Office & Training Facility • 230 Technology Way • Bowling Green**

Algebra has long been considered the gateway to future mathematical success, and the elementary grades are an ideal launching pad for students to develop algebraic thinking. Arithmetic and algebraic thinking are closely connected, and students' abilities to apply and extend previous understanding of arithmetic to algebraic expressions is crucial. Teachers of grades 4–6 have an awesome opportunity to help bridge the gap between elementary and middle school mathematics by laying a strong foundation of mathematical understanding through algebraic reasoning.

Join GRREC Mathematics Consultants, Rebecca Gaddie and Randi Womack for three days of professional learning to discover how the process of creating generalizations from arithmetic is central to students learning algebra and how providing opportunities for students to think and reason algebraically can be a recipe for success!

### Participants will:

- Explore a progression of algebraic thinking as developed in the Kentucky Academic Standards
- Discover how to teach for deeper conceptual understanding of mathematical content
- Learn strategies to increase student participation and discourse through intentional planning
- Develop awareness of shifts in classroom practice that support students as they demonstrate the Standards for Mathematical Practice
- Leave with student-centered tasks to incorporate in their classrooms

### PGES Connections

#### Domain 1: Planning & Preparation

- *Component 1a: Demonstrating Knowledge of Content & Pedagogy*
- *Component 1c: Selecting Instructional Outcomes*
- *Component 1e: Designing Coherent Instruction*

#### Domain 2: Classroom Environment

- *Component 2b: Establishing a Culture for Learning*

#### Domain 3: Instruction

- *Component 3b: Using Questioning and Discussion Techniques*
- *Component 3c: Engaging Students in Learning*

#### Domain 4: Professional Responsibilities

- *Component 4a: Reflecting on Teaching*
- *Component 4e: Growing and Developing Professionally*

<b>For:</b>	Mathematics Teachers Grades 4-6, Instructional Coaches, Curriculum Specialists, Instructional Assistants, Special Education Teachers and Directors of Special Education
<b>Dates:</b>	November 16, 2016 and January 11 and 12, 2017 ( <i>snow make-up dates Feb. 2 &amp; 3, 2017</i> )
<b>Time:</b>	8:30 – 3:30 CST
<b>Cost:</b>	<b>\$350.00 GRREC districts    \$650.00 Non-GRREC</b> ( <i>Includes breakfast &amp; snack – lunch on your own</i> )
<b>Materials:</b>	Resource books: <u>Teaching Student-Centered Mathematics</u> , <u>Uncomplicating Algebra</u> , & manipulatives
<b>EILA Credit Provided</b>	<b>Space is limited      Deadline to register: Monday, Nov. 14, 2016</b>

**Registration Form*****Thinking and Reasoning Algebraically: A Recipe for Success******Grades 4-6***

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*Please Print:*

Name: \_\_\_\_\_ District: \_\_\_\_\_

School: \_\_\_\_\_ Position: \_\_\_\_\_

Cell #: \_\_\_\_\_ Work Email: \_\_\_\_\_

\_\_\_\_\_ (P. O. # required for registration)

*Please check which edition of Teaching Student-Centered Mathematics you prefer:*

\_\_\_\_\_ Grades 3-5, Volume II

\_\_\_\_\_ Grades 6-8, Volume III

Note: School districts (or schools) will be billed following the activity based upon registration. Please cancel your registration within three (3) working days of the activity to avoid being billed for the fee and to allow another participant the opportunity to attend. Substitutions will be allowed.

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**Registration Deadline: November 14, 2016****[Click Here to Register Online](#) or****fax this completed form to GRREC at (270) 563-2208**

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Sponsored by

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**Questions?**Contact Kim Estes at (270) 563-2113 or e-mail [kim.estes@grrec.org](mailto:kim.estes@grrec.org)